No 1

title. 연습문제 1.3 date.

#1 (a) $\lim_{x\to 2} \frac{x-2}{x^2-4} = \lim_{x\to 2} \frac{x-2}{(x-2)(x+2)}$

$= \lim_{x\to 2} \frac{1}{x+2} = \frac{1}{4}$.

#1-(b) $\lim_{x\to\infty} \frac{2x^2+1}{3x^2+2x} = \lim_{x\to\infty} \frac{2+\frac{1}{x^2}}{3+\frac{2}{x}} = \frac{2}{3}$

#1-(c) $\lim_{x\to -1} \frac{\sqrt{x+2}-1}{x+1} = \lim_{x\to -1} \frac{(\sqrt{x+2}-1)(\sqrt{x+2}+1)}{(x+1)(\sqrt{x+2}+1)}$

$= \lim_{x\to -1} \frac{x+1}{(x+1)(\sqrt{x+2}+1)}$

$= \lim_{x\to -1} \frac{1}{\sqrt{x+2}+1} = \frac{1}{2}$

#1-(d) $\lim_{x\to\infty} (\sqrt{x^2+2x} - x) = \lim_{x\to\infty} \frac{2x}{\sqrt{x^2+2x}+x}$

$= \lim_{x\to\infty} \frac{2}{\sqrt{1+\frac{2}{x}}+1}$

$= \frac{2}{2} = 1$

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